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a) staining <u>intact</u>, <u>viable</u> sperm collected from a male mammal with a fluorescent dye capable of selectively staining DNA in living cells by incubating the sperm with the dye at a temperature in the range of about 30°-39° C for a period of time sufficiently long for staining to take place uniformly but sufficiently short to preserve viability of the sperm;

b) passing the sperm into an electrically conductive and isotonic viability-supporting sheath fluid to form a suspension of sperm which are caused to flow singly in a stream of sheath fluid;

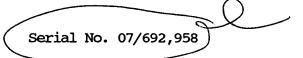
c) passing the sheath fluid containing the sperm before an excitation light source causing the stained DNA to fluoresce;

d) passing the sheath fluid containing the sperm through both a means for detecting the fluorescence of the stained DNA and also a cell sorting means, the means for detecting fluorescence having at least two detectors arranged such that a first detector determines the orientation of sperm on the basis of magnitude of fluorescence and controls a second detector to measure the DNA content of sperm on the basis of magnitude of fluorescence of those sperm that have been determined to be in a preselected orientation;

 $\begin{pmatrix} 1 \\ 1 \end{pmatrix}$  e) selecting by said cell sorting means the sperm having a DNA content corresponding to a desired chromosome which will produce a desired gender



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of offspring, and separating the selected sperm from nonselected sperm; and

f) collecting the selected sperm in a viability-supporting collecting fluid.

## Rewrite Claim 27 as follows:

(Amended). A method to preselect the sex of mammalian offspring comprising:

- a) staining <u>intact</u>, <u>viable</u> sperm collected from a male mammal with a fluorescent dye capable of selectively staining DNA in living cells by incubating sperm with the dye at a temperature in the range of about 30°-39° C for a period of time sufficiently long for staining to take place uniformly but sufficiently short to preserve viability of the sperm;
- b) passing the sperm into an electrically conductive and isotonic viability-supporting sheath fluid to form a suspension of sperm which are caused to flow singly in a stream of sheath fluid;
- c) passing the sheath fluid containing the sperm before an excitation light source causing the stained DNA to fluoresce;
- d) passing the sheath fluid containing the sperm through both a means for detecting the fluorescence of the stained DNA and also a cell sorting means to measure the DNA content of the sperm on the basis of magnitude of fluorescence of the sperm;

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- e) selecting by said cell sorting means the sperm having a DNA content corresponding to a desired chromosome which will produce the desired gender of offspring, and separating the selected sperm from nonselected sperm; and
- f) collecting the selected sperm in a viability-supporting collecting fluid.

Rewrite Claim 28 as follows:

(Amended). A method for preparing <u>intact</u>, <u>viable</u>, mammalian sperm for sorting into X- and Y-chromosome-bearing populations based on DNA content, the method comprising [:

a)] staining <u>intact</u>, <u>viable</u> sperm collected from a male mammal with a fluorescent dye capable of selectively staining DNA in living cells by incubating the sperm with the dye at a temperature in the range of about 30°-39° C for a period of time sufficiently long for staining to take place uniformly but sufficiently short to preserve viability of the sperm.

## REMARKS

Claims 9-34 are now in the case.

Claims 1-8 have been cancelled.

No claim has been allowed.